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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,882	02/19/2004	Shinya Kano	FUJI 20.965(100794-00559)	7740

26304 7590 03/17/2008

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EXAMINER	
KIM, DAVID S	

ART UNIT	PAPER NUMBER
2613	

MAIL DATE	DELIVERY MODE
03/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/783,882	KANO, SHINYA	
	Examiner	Art Unit	
	DAVID S. KIM	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16-31* is/are pending in the application.

4a) Of the above claim(s) *7-14,17,19 and 28-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,16,18 and 20-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: *See Continuation Sheet*.

Continuation of Attachment(s) 6). Other:

Some of the drawings filed on 19 February 2004 are still objected to by the Examiner.

DETAILED ACTION

Drawings

1. Applicant's response to the objections to the drawings in the previous Office Action (mailed on 21 August 2007) is noted and appreciated. Applicant responded by cancelling claim 15, by presenting arguments about the objections to the features of claims 16, 18, 20, and 21, and by amending Figs. 1-4C.

Regarding the cancellation of claim 15, the previous objection to the features of claim 15 is presently moot.

Regarding the arguments about the objections to the features of claims 16, 18, 20, and 21, Applicant states:

> The Examiner objected to the drawings for not showing features recited in dependent claims 15-16, 18, and 20-21. Applicant cancels claim 15, and respectfully submits that claims 16 and 18 merely recite features that correspond to the "second modification" described in the specification and claims 20-21 merely recite features that correspond to the "third modification" described in the specification. Please see page 68, line 19 to page 71, line 1 of the specification. Applicant, thus, respectfully submits that these claims merely recite features that correspond to these alternative "modifications" to round out the scope of the claimed invention, and do not recite any features that are crucial to the patentability of the invention--which are recited in base claim 1 from which they depend. Such "modifications" are readily understandable by one skilled in the art by looking at the existing drawings--thus, not requiring a drawing to aid the understanding of the invention.
>
> Applicant respectfully submits that the 37 CFR § 1.83(a) requirements flow from 35 U.S.C. § 113, which is limited to features that are required to understanding the claimed invention:
>
> "The applicant shall furnish a drawing ***where necessary for the understanding of the subject matter sought to be patented***." (Emphasis added)
>
> And, thus, 37 CFR § 1.83(a) does not require the illustration of features that are not essential for a proper understanding of the invention.
>
> In addition, the Examiner has cited U.S. Patent Application Publication No. 2002/0126625 to Liu et al. and U.S. Patent Application Publication No. 2002/0126342 to Wetzel et al., as allegedly rendering the features recited in these claims obvious to the one skilled in the art at the time the claimed invention was made. Accordingly, Applicant respectfully submits that the application, as filed, adequately discloses the features recited in claims 16, 18, and 20-21, and that an illustration thereof is not necessary for the understanding of the subject matter sought to be patented nor do such features admit to illustration required for such understanding by one skilled in the art at the time the claimed invention was made. And Applicant, thus, respectfully requests that the Examiner withdraw the objection (REMARKS, p. 18-19, emphasis Applicant's).

Applicant's reference to 35 U.S.C. 113 is appreciated. However, notice that the MPEP discusses how 35 U.S.C. 113 and 37 C.F.R. 1.83(a) are related to the following situation:

> ***35 U.S.C. 113*** addresses the situation wherein a drawing is ***not necessary*** for the understanding of the invention, but the ***subject matter sought to be patented admits of illustration by a drawing and the applicant has not furnished a drawing***. The lack of a drawing in this situation does not render the application incomplete but rather is treated as an

> ***informality***. A filing date will be accorded with the original presentation of the papers, despite the absence of drawings. The acceptance of an application without a drawing does not preclude the examiner from requiring an illustration in the form of a drawing under 37 CFR 1.81(c) or 37 CFR 1.83(c). In requiring such a drawing, the examiner should clearly indicate that the requirement is made under 37 CFR 1.81(c) or ***37 CFR 1.83(a)*** and be careful not to state that he or she is doing so "because it is necessary for the understanding of the invention," as that might give rise to an erroneous impression as to the completeness of the application as filed. (MPEP 608.02, heading IV. HANDLING OF DRAWING REQUIREMENTS UNDER THE SECOND SENTENCE OF 35 U.S.C 113 - ILLUSTRATION SUBSEQUENTLY REQUIRED, emphasis Examiner's).

Since this highlighted situation applies to the standing objection to the features of claims 16, 18, 20, and 21, Applicant's arguments are not persuasive. Thus, Examiner respectfully re-presents the standing objections to the features of claims 16, 18, 20, and 21:

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

In claims 16 and 18, the "control message reception awaiting timer" is not shown.

In claim 20, the "link summary message" is not shown, and the situation regarding this "link summary message" is not shown.

In claim 21, the "errors" are not shown, and the situation regarding these "errors" is not shown.

Regarding the amended Figs. 1-4C, these drawings are approved.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-6, 16, 18, and 20-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent Application Publication No. 2002/0126625 A1, hereinafter "Liu") in view of Wetzel et al. (U.S. Patent Application Publication No. 2002/0126342 A1, hereinafter "Wetzel").

Regarding claim 1, Liu discloses:

An optical transmission system including:

a first optical transmission apparatus having a first optical switch (node α in Fig. 1); and

a second optical transmission apparatus having a second optical switch (node β in Fig. 1),

said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus (e.g., paragraph [0004]),

wherein

the first optical transmission apparatus includes:

a first transmission unit provided on an input side of the first optical switch (sender α in Fig. 1) configured to transmit a first control message including a transmission port number of a transmission port for transmitting the first control message (e.g., Fig. 5 and paragraph [0047]).

Liu does not expressly disclose:

wherein

the first optical transmission apparatus includes:

a transmission port control unit configured to control the first optical switch so that the first control message is transmitted through different transmission ports sequentially.

However, Wetzel provides details for first and second transmission apparatuses (Wetzel, e.g., nodes 210 and 220 in Fig. 2), including *a transmission port control unit* (Wetzel, e.g., 214 in Fig. 2) configured to control the first optical switch so that the first control message is transmitted through different transmission ports sequentially (Wetzel, "each of the ports" in paragraph [0028]). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement such detailed teachings of Wetzel in the system of Liu. One of ordinary skill in the art would have been motivated to do this since Liu broadly discloses the use of an optical switch for connecting control messages to transmission ports (Liu, e.g., paragraph [0022]) and is relatively silent about the details for implementing this usage of the optical switch. These teachings of Wetzel speak into this silence with exemplary details for one of ordinary skill in the art to actually implement this system.

Regarding claim 2, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein the second optical transmission apparatus includes:

a first reception unit (Liu, receiver β in Fig. 1) provided on an output side of the second optical switch configured to receive the first control message (e.g., paragraphs [0024], [0028], [0032]); and

a reception port control unit (Wetzel, e.g., 224 in Fig. 2) configured to control the second optical switch so that the first control message is received by the first reception unit through different reception ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, "each of the ports" in paragraph [0029]).

Regarding claim 3, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein the transmission port control unit controls the first optical switch so that the first control message is transmitted through different transmission ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, "each of the ports" in paragraph [0028]).

Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 1, wherein the transmission port control unit controls the first optical switch so that the first control message is transmitted through different transmission ports sequentially ***and periodically***.

However, periodic operation is a well-known technique throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation of periodic operation. One of ordinary skill in the art would have been motivated to do this to provide the well-known benefit of periodically monitoring the status of the system.

Regarding claim 4, Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 2, wherein after receiving the first control message, the first reception unit controls the reception port control unit so as to receive the first control message next time through a reception port having a reception port number next to a present reception port number.

However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next reception port. At the time the invention was made, it would have been

obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each reception port, so that all the connections may be discovered (Liu, paragraph [0018]).

Regarding claim 5, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 2, wherein

the first optical transmission apparatus further comprises a second reception unit (Liu, receiver α in Fig. 1) configured to receive a second control message (Liu, e.g., paragraphs [0026], [0030]) including the transmission port number (Liu, e.g., "1" in paragraphs [0026], [0030]) and a reception port number (Liu, e.g., "A" in paragraphs [0026], [0030]) of the second optical transmission apparatus for receiving the first control message.

Liu in view of Wetzel does not expressly disclose:

wherein

after the second reception unit receives the second control message, the first transmission unit transmits a control message as the first control message from a transmission port having a transmission port number next to the transmission port number included in the second control message, the next transmission port number being included in the control message transmitted by the first transmission unit as the first control message.

However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next transmission port. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each transmission port, so that all the connections may be discovered (Liu, paragraph [0018]).

Regarding claim 6, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 5, wherein the second optical transmission apparatus further comprises a second transmission unit configured to transmit the second control message (Liu, sender β in Fig. 1),

wherein

the reception port control unit (Wetzel, e.g., 224 in Fig. 2) controls the second optical switch so that the first control message is received through different reception ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, "each of the ports" in paragraph [0029]).

Liu in view of Wetzel does not expressly disclose:

wherein

the reception port control unit controls the second optical switch so that the first control message is received through different reception ports sequentially ***and periodically***.

However, periodic operation is a well-known technique throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation of periodic operation. One of ordinary skill in the art would have been motivated to do this to provide the well-known benefit of periodically monitoring the status of the system.

Regarding claim 16, Liu in view of Wetzel does not expressly disclose:

The optical transmission system as claimed in claim 2, further comprising

a control message reception waiting timer that starts to count the time when the first control message is received, and terminates after a predetermined time period,

wherein

when the control message reception waiting timer terminates, the reception port control unit controls the second optical switch so that the first control message is received through a different reception port.

However, Liu does imply the use of some kind of control message waiting timer (Liu, paragraphs [0036] and [0038]), though not specifically "to count the time when the first control message is received". Still, this kind of timer is used for the common practice of a "time-out" indication, which is extremely well known throughout the art. At the time the invention was made, it would have been obvious to one of

ordinary skill in the art to implement this kind of timer "to count the time when the first control message is received". One of ordinary skill in the art would have been motivated to do this to implement a "time-out" indication of an excessive period of time for waiting for the control message. Otherwise, one may wait for the control message indefinitely, thus slowing the connection discovery method of the prior art of record. Then, it would be obvious to control the second optical switch so that the first control message is received through a different reception port, which may be carrying the control message.

Regarding claim 18, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein the first optical transmission apparatus includes:

a first reception unit (Liu, receiver α in Fig. 1) configured to receive a second control message (Liu, e.g., paragraphs [0026], [0030]) including the transmission port number (Liu, e.g., "1" in paragraphs [0026], [0030]) and a reception port number (Liu, e.g., "A" in paragraphs [0026], [0030]) of a reception port of the second optical transmission apparatus for receiving the first control message; and

a control message reception waiting timer (Liu, paragraphs [0036] and [0038]) that starts to count the time when the second control message is received (Liu, paragraphs [0036] and [0038]), and terminates after a predetermined time period (Liu, paragraphs [0036] and [0038], such a timer generally terminates after the "certain amount of time").

Liu in view of the Wetzel does not expressly disclose:

wherein

when the control message reception waiting timer terminates, the transmission port control unit controls the first optical switch so that the first control message is transmitted through a next transmission port, the next transmission port number being included in said transmitted first control message.

However, this limitation corresponds to simply performing the connection discovery method of the prior art of record at the next transmission port. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation in the system of the prior art of

record. One of ordinary skill in the art would have been motivated to do this to perform the connection discovery method of the prior art of record for each transmission port, so that all the connections may be discovered (Liu, paragraph [0018]).

Regarding claim 20, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein

a link summary message (e.g., Liu, paragraphs [0027] – [0034]) including a connection relation between the first optical transmission apparatus and the second optical transmission apparatus is exchanged therebetween.

Liu in view of Wetzel does not expressly disclose:

transmission ports and reception ports not in agreement or not recognized in the connection relation between the first optical transmission apparatus and the second optical transmission apparatus are used for searching for and setting the transmission port number and a reception port number.

However, in the case that there are such ports, it would be obvious to search for and set the port numbers for these ports. One of ordinary skill in the art would have been motivated to do this so that the connections of these ports are known (Liu, paragraph [0018]).

Regarding claim 21, Liu in view of Wetzel discloses:

The optical transmission system as claimed in claim 1, wherein

when errors (Liu, e.g., paragraphs [0037] and [0038]) occur in transmission between the first optical transmission apparatus and the second optical transmission apparatus.

Liu in view of Wetzel does not expressly disclose:

transmission ports and reception ports related to the erroneous transmission are used for searching for and setting the transmission port number and a reception port number.

However, in the case that there are such ports, it would be obvious to search for and set the port numbers for these ports. One of ordinary skill in the art would have been motivated to do this so that the connections of these ports are known (Liu, paragraph [0018]).

Regarding claims 22-26, claims 22, 23, 24, 25, and 26 are claims that introduce limitations that correspond to the limitations introduced by claims 1, 3, 5, 2, and 4, respectively. Therefore, the recited limitations in claims 1-5 read on the corresponding limitations in claims 22-26.

Regarding claim 27, Liu in view of Wetzel discloses:

The optical transmission apparatus as claimed in claim 26, wherein

the reception port control unit (Wetzel, e.g., 224 in Fig. 2) controls the optical switch so that the control message is received through different reception ports sequentially (Liu, e.g., scanning in paragraph [0035]; Wetzel, "each of the ports" in paragraph [0029]).

Liu in view of Wetzel does not expressly disclose:

the reception port control unit controls the optical switch so that the control message is received through different reception ports sequentially ***and periodically***.

However, periodic operation is a well-known technique throughout the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include this limitation of periodic operation. One of ordinary skill in the art would have been motivated to do this to provide the well-known benefit of periodically monitoring the status of the system.

Response to Arguments

4. Applicant's arguments filed on 21 December 2007 have been fully considered but they are not persuasive. Applicant presents two salient points.

Regarding the first point, Applicant states:

> The Examiner relied upon the description in Liu et al. of a connect discovery message being sent from one node to another as alleged suggestion of the features of the claimed first transmission unit. The cited portions of Liu et al. only include description of senders and receivers ***at*** respectively nodes for communications, and do not include any disclosure or suggestion of the structural relationships between any sending unit or receiving unit at the respective nodes. In other words, Liu et al., as cited and relied upon by the Examiner, fail to disclose or suggest the claimed "first transmission unit ***provided on an input side of the first optical switch*** configured to transmit a first control message including a transmission port number of a transmission port for transmitting the first control message." (REMARKS, p. 19-20, bridging paragraph, emphasis Applicant's).

Examiner respectfully notes that the "first transmission unit" is designated by "sender α" in Fig. 1 and that the "first optical switch" is designated by "node α" in Fig. 1. This "first transmission unit" /"sender α" is connected to an input of this "first optical switch"/"node α". Notice the side of the "first optical

switch"/"node α" that receives the input of the "first transmission unit" /"sender α". This side constitutes an "input side of the first optical switch". Accordingly, Applicant's point is not persuasive.

Regarding the second point, Applicant states:

> The Examiner conceded that Liu et al. fail to disclose the features of the claimed transmission port control unit, and relied upon the description in Wetzel et al. of signals being sent to "each of the ports by routing" as alleged suggestion of the claimed features. Such portions of Wetzel et al. merely describe signals being routed to respective ports and do not disclose or suggest the sequential or temporal element in transmitting the signals. In other words, such portions merely suggest that a signal is transmitted to each of the ports, but do not disclose or suggest any significance of any timing or order in which the signals are sent to "each of the ports." (REMARKS, p. 20, 1st full paragraph, emphasis Applicant's).

Examiner respectfully notes the following portion of Wetzel, cited in the treatment of claim 1 above:

> [0028] The technique of determining the topology, or the connection information, of network 200 can be explained using nodes NE 220 and ND 210. Control circuit 224 causes light detector 226 to produce optical signals ("identification signal") identifying node NE 220 such as signal corresponding to node id "NE". *The **identification signal** may be sent to **each of the ports** 221 by routing, **using switch 222**, the **identification signal to each of the ports 221**. Preferably, the identification signal also includes information regarding **which port of node NE 220** the identification signal is being sent from.* (paragraph [0028], emphasis Examiner's).

This highlighted portion about "*information regarding **which port of node NE 220** the identification signal is being sent from*" implies that the "identification signal"/"control message" is sent through each of the different transmission ports, one at a time, i.e., sequentially. That is, each time the "identification signal"/"control message" is sent through a particular port, the "identification signal"/"control message" would also include "*information regarding **which port of node NE 220** the identification signal is being sent from*". For the next port, the "identification signal"/"control message" would include port identification information for identifying this next port. This process would continue for each of the different transmission ports, one at a time, i.e., sequentially. Accordingly, Applicant's point is not persuasive.

Summarily, Applicant's arguments are not persuasive. Accordingly, Examiner respectfully maintains the standing rejections.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date

of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID S. KIM whose telephone number is (571)272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S. K./
Examiner, Art Unit 2613

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613